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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,920	10/29/1999	ATSUSHI WATANABE	392.1666/JDH	6526

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EXAMINER	
LU, TOM Y	

ART UNIT	PAPER NUMBER
2621	15

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/429,920	Applicant(s) WATANABE ET AL.
	Examiner Tom Y Lu	Art Unit 2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 11-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Request for Continued Examination filed on March 19, 2004 has been entered.

2. Upon entry of Request for Continued Examination, the amendment and written response filed on January 22, 2004 has been entered.

3. Claims 9-10 were cancelled.

4. Claim 15 is added.

5. Claims 1-8 and 11-15 are pending.

Response to Arguments

6. Applicant's arguments filed on January 22, 2004 have been fully considered but they are not persuasive.

Applicant argues the combination of Tanabe and Jyumonji references does not teach the limitation of "a unit used for manipulation for image processing". Upon further review of specification, and in light of applicant's arguments, the examiner respectfully disagrees for the following reasons. First of all, as applicant states in the specification, page 2, lines 4-8, "the teaching pendant is used for manipulating the image processing apparatus and teaching a program for processing an image", which implies the function of the manipulation unit in the teaching pendant is to send out operator input commands to the image processing apparatus to perform an image processing operation as shown in figure 3. And as applicant admitted in Remarks, page 6, lines 19-20, Tanabe's teaching pendant carries out a program or an operation to robot controller 20 and personal computer 30 by clicking/touching a picture or icon displayed on the teaching pendant, column 3, lines 36-60. In addition, Jyumonji teaches an image processing

device 206, which is connected to the robot controller 1, is used to perform image-processing operation. Therefore, "manipulation for image processing" in the combination of Tanabe and Jyumonji is performed by clicking the icon/picture on the teaching pendant, then the teaching pendant sends a signal to the image processing device through the robot controller 1 to perform the processing operation, and the icon/picture is the claimed "unit". As a result, the limitation of "a unit used for manipulation for image processing" is satisfied.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al (U.S. Patent No. 5,705,906) in view of Jyumonji (U.S. Patent No. 5,987,591).

a. As applied to claim 4, which is representative of claims 1, 2 and 8, Tanabe discloses a portable teaching pendant is connected to robot controller through a cable (Tanabe at column 3, lines 15-16, discloses a cable connecting the personal computer 30 to the teaching pendant 10 has a length of several meters. Personal computer 30 in combination with controller 20 in Tanabe corresponds to the claimed "controller"); and teaching pendant comprises a unit for generating or editing a robot program (Tanabe at column 3, lines 24-26, discloses the teaching pendant 10 can be used as a display unit for creating a program for the robot), a unit for operating the robot, and a display unit, and can display on the display unit

the converted image (Tanabe at column 3, lines 25-28, discloses the teaching pendant 10 can display a state of the robot. A state of the robot contains the input data mentioned at column 3, lines 31. Such input data corresponds to the claimed "an image converted into the gray scale"), and comprises a unit used for manipulation for image processing (Tanabe at column 3, lines 26-27, discloses the teaching pendant 10 includes functions necessary for robot teaching operations); and display unit displays, indication for generating or editing of robot program and indication for manipulation of image processing, together with an image simultaneously (Tanabe, at column 3, lines 36-48, discloses since the liquid crystal display unit 13 of the teaching pendant 10 is also used as a display unit for the personal computer 30, an operating system... with a picture or icon expressing a function displayed on a screen. Note since such display unit can be used as an operating system, it inherently allows users to process multi-tasks simultaneously), or allows a user to select either a switching mode or a superposition mode (Tanabe at column 2, line 42, discloses a jog key switch 15. When it is used, the teaching pendant is operating under switching mode. When the crystal display unit 13 is used for creating program and displaying image data, the pendant is under superposition mode). Tanabe at column 2, lines 29-33, discloses a robot system includes a teaching pendant 10, a robot controller 20, and a personal computer 30, which are connected with each other, however a robot main body is not shown but is connected to the robot controller (note in conventional technology, a camera is mounted on the robot to obtain the image

data, Tanabe assumes it is the case in his system, therefore, a step of obtaining image data is omitted. However, for the sake of clarity, examiner incorporates a secondary reference of Jyumonji to show such step exists because without such step, the teaching pendant would not be able to obtain the state of robot and input data at column 3, lines 30-31). Jyumonji discloses a unit for fetching an image from a camera (Jyumonji, at column 6, lines 34-35, discloses the camera interface 203 serves as input-output device for the CCD camera 30); memory which stores image data from the camera or intermediate image data obtained in a stage of image processing (Jyumonji, at column 6, lines 39, discloses the image memory 204); and a unit for converting image data from the camera, the image data from the camera stored in the memory, or intermediate data into a gray scale or a color scale (Jyumonji, at column 6, line 38, discloses the image taken is converted into gray scale). At the time the invention was made, it would have been obvious to show a robot system with a camera to obtain images, and display such images on the teaching pendant, because the teaching pendant in Tanabe is connected to a robot controller, such teaching pendant is capable of displaying image data, and Jyumonji at column 4, lines 46-50 suggests of capturing images for displaying purposes, and the captured image data is processed in image processor 2, and such image processor is connected with robot controller 1 (please see figure 4 in Jyumonji). It would be an advantage for a person of ordinary skill in the art to display the captured image data as taught by Jyumonji in Tanabe's teaching pendant since displaying images on a teaching pendant instead of on a separate

TV monitor enhances the operability and portability as Tanabe suggests at column 3, line 34-35.

b. As applied to Claim 3, which is representative of claims 5 and 11, Tanabe discloses a unit for displaying and superposing geometric graphics on the image displayed on the display unit in accordance with the operation procedure of image processing and specifying an image processing with respect to the image (Tanabe at column 3, lines 40-44, discloses when a program of the robot is to be create, when a state of the robot is to be displayed or when a teaching operation is to be carried out, there can be constructed such an operation environment that operation is intuitively carried out in an easy to understand fashion with a picture or icon expression a function displayed on a screen. Note such picture corresponds to the claimed "geometric graphics").

c. As applied to Claim 6, which is representative of claims 12 and 13, Tanabe discloses a part of the operation unit of the teaching pendant is configured by a touch panel (Tanabe at column 2, line 42, discloses a touch panel 16).

d. Referring to Claim 7, Tanabe discloses a unit for incorporating an instruction to process an image into a program of robot (Tanabe: column 3, lines 42-48).

e. With regard to Claim 14, the only difference between Claim 14 and Claim 4 is Claim 14 calls for additional limitation of "an image processing unit used for image processing" which Jyumonji at column 6, line 8, teaches an image processor 2 is used to process the captured image data from the camera mounted on the robot.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe and in view of Jyumonji, and further in view of Goodfellow et al (U.S. Patent No. 5,572,102)

With regard to Claim 15, the only difference between Claim 15 and Claim 1 is Claim 15 calls for an additional limitation of "wherein said display unit displays a video image form the camera that is continuously updated", Tanabe and Jyumonji teach a CCD camera is used to capture images and display the images on the teaching pendant (see explanation in Claim 1). However, Tanabe and Jyumonji do not explicitly teach the CCD camera is a video camera. Goodfellow in figure 1 shows a solid state video camera is connected to a robot controller 22 as an image acquisition apparatus. At the time the invention was made, a person of ordinary skill in the art would have been motivated to use a video camera as image acquisition means because in robotic environment, the operator must monitor the state of the robot constantly during the operation (Tannabe: column 3, line 64-65), and by using a video camera, the state of the robot is always updated continuously, also Tanabe teaches the teaching pendant is capable of displaying an image signal, such as a video signal by acting as a display unit of a person computer (column 3, lines 63-64 and column 4, line 5).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu

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